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ABSTRACTS

BIOLOGICAL INVASIONS AFFECT RESOURCE SPECIALISATION: LONG TERM DATA OF FRUIT FLY (DIPTERA: TEPHRITIDAE) COMMUNITIES IN RÉUNION ISLAND

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Invasion of new species within an established community can induce changes in the community structure. In the case of phytophagous insects, invasive species may become part of the resident trophic network as new herbivores or competitors. The aim of our study is to determine the consequences over the trophic network of the invasion of the fruit fly *Bactrocera zonata* in La Réunion in a community of species differing widely in their degree of host specialisation. The community includes three polyphagous species (*Ceratitis catoirii, Ceratitis capitata* and *Ceratitis rosa*) and four oligophagous species (*Dacus demmerezi, Dacus ciliatus, Neoceratitis cyanescens* and *Bactrocera cucurbitae*). Using a large database of frequency of the different flies in more than 100 host plants species collected between 1991 and 2009, we assessed the evolution of host range for each species after the arrival of *B. zonata* in 2000. The results show that the host range of *B. zonata* mainly overlaps with those of *C. catoirii*, *C. capitata* and *C. rosa.* These three species have decreased their number of hosts and / or frequency of infestation following the invasion by *B. zonata*. After the reconstruction of host plant phylogeny, we also show that a strong relation between plant relatedness and host range exists. Importantly, this relation was not disrupted with *B. zonata* invasion. This indicates that whereas arrival of a new species generates reduction of the host range, it did not affect the influence of the plant phylogeny on the host range.

Keywords: Biological invasion, host specialisation, phylogenetic signal, Tephritidae